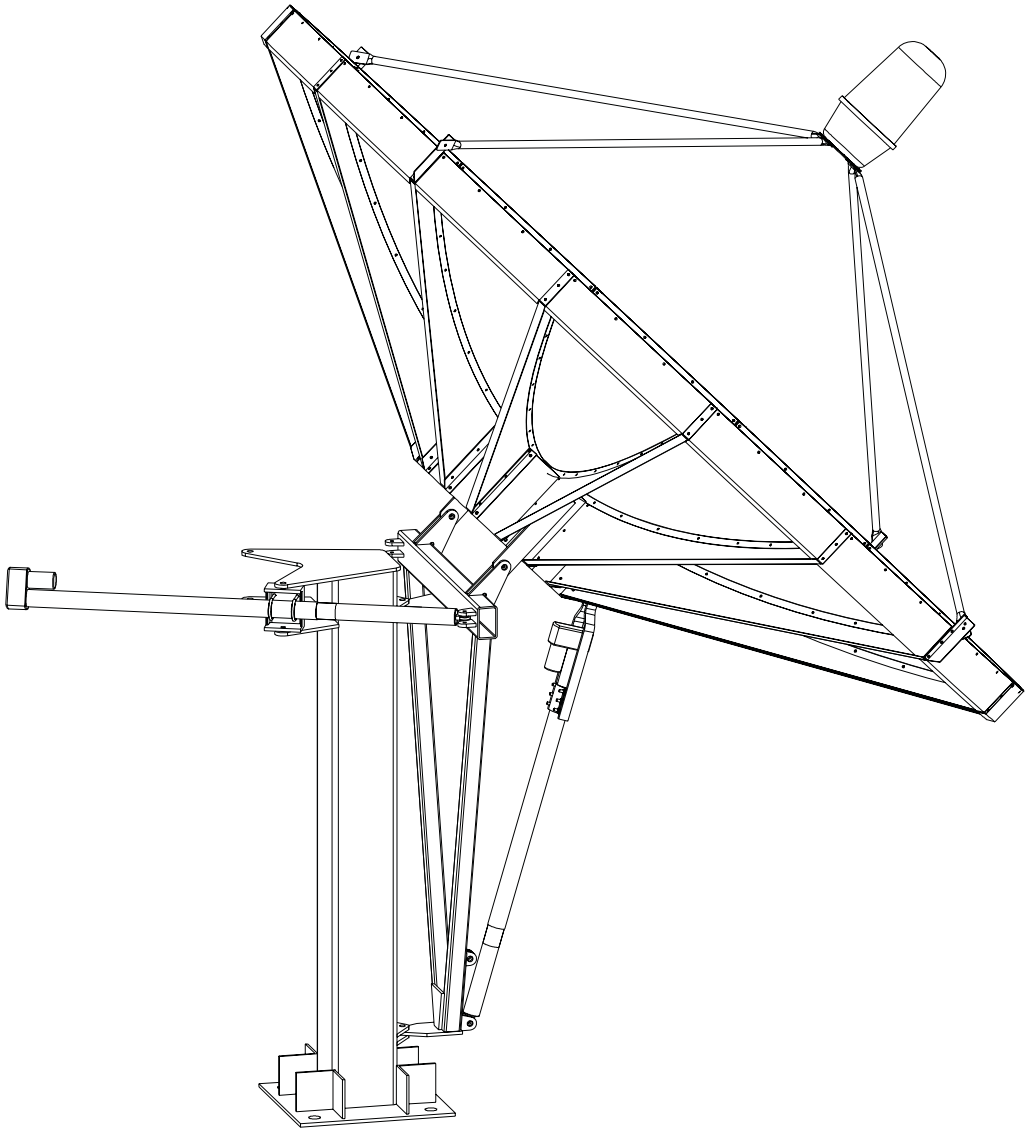
PATRIOT



3.8m Commercial Antenna
King Post Mount

PATRIOT

LIMITED TWELVE (12) MONTH WARRANTY

This PATRIOT ANTENNA equipment is warranted to be free from defects in material and workmanship under normal use and service. PATRIOT ANTENNA shall repair or replace defective equipment, at no charge, or at its option, refund the purchase price, if the equipment is returned to PATRIOT ANTENNA not more than twelve (12) months after shipment. Removal or reinstallation of equipment and its transportation shall not be at cost of PATRIOT ANTENNA except PATRIOT ANTENNA shall return repaired or replaced equipment freight prepaid.

This Warranty shall not apply to equipment which has been repaired or altered in any way so as to affect its stability or durability, or which has been subject to misuse, negligence or accident. This Warranty does not cover equipment which has been impaired by severe weather conditions such as excessive wind, ice, storms, lightning, or other natural occurrences over which PATRIOT ANTENNA has no control, and this Warranty shall not apply to equipment which has been operated or installed other than in accordance with the instructions furnished by PATRIOT ANTENNA.

Claimants under this Warranty shall present their claims along with the defective equipment to PATRIOT ANTENNA immediately upon failure. Noncompliance with any part of this claim procedure may invalidate this warranty in whole or in part.

THIS WARRANTY IS EXPRESSLY IN LIEU OF ALL OTHER AGREEMENTS AND WARRANTIES, ANY IMPLIED WARRANTY OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE IS LIMITED IN DURATION TO THE DURATION OF THIS WARRANTY. PATRIOT ANTENNA DOES NOT AUTHORIZE ANY PERSON TO ASSUME FOR IT THE OBLIGATIONS CONTAINED IN THIS WARRANTY AND PATRIOT ANTENNA NEITHER ASSUMES NOR AUTHORIZES ANY REPRESENTATIVE OR OTHER PERSON TO ASSUME FOR IT ANY OTHER LIABILITY IN CONNECTION WITH THE EQUIPMENT DELIVERED OR PROVIDED.

IN NO EVENT SHALL PATRIOT ANTENNA BE LIABLE FOR ANY LOSS OF PROFITS, LOSS OF USE, INTERRUPTION OF BUSINESS, OR INDIRECT, SPECIAL OR CONSEQUENTIAL DAMAGES OF ANY KIND.

In no event shall PATRIOT ANTENNA be liable for damages in an amount greater than the purchase price of the equipment.

Some states do not allow limitations on how long an implied warranty lasts, or allow the exclusion or limitation of incidental or consequential damages, so the above limitations or exclusions may not apply to you.

PATRIOT ANTENNA has the right to void the warranty when the antenna is installed by someone other then a certified installer.

Product Serial Number- _____

Date Purchased- _____

Patriot Antenna Systems
704 North Clark Street
Albion, MI 49224 USA
Tel: (517)629-5990
Fax: (517)629-6690
E-mail: info@sepatriot.com

IMPORTANT!!!

INSTALLATION OF THIS PRODUCT SHOULD BE PERFORMED ONLY BY A PROFESSIONAL INSTALLER AND IS NOT RECOMMENDED FOR CONSUMER D.I.Y. (DO-IT-YOURSELF) INSTALLATIONS.

WATCH FOR WIRES!

Installation of this product near power lines is dangerous. For your own safety, follow these important safety rules.

.

1. Perform as many functions as possible on the ground.

2. Watch out for overhead power lines. Check the distance to the power lines before starting installation. We recommend you stay a minimum of 6 meters (20 feet) from all power lines.

3. Do not use metal ladders.

4. Do not install antenna or mast assembly on a windy day.

5. If you start to drop antenna or mast assembly, get away from it and let if fall.

6. If any part of the antenna or mast assembly comes in contact with a power line, call your local power company. DO NOT TRY TO REMOVE IT YOURSELF! They will remove it safely.

7. Make sure that the mast assembly is properly grounded.

WARNING

Assembling dish antennas on windy days can be dangerous. Because of the antenna surface, even slight winds create strong forces. For example, a 1.0m antenna facing a wind of 32 km/h (20 mph) can undergo forces of 269 N (60 lbs.). Be prepared to safely handle these forces at unexpected moments. Do not attempt to assemble, move or mount dish on windy days or serious, even fatal accidents may occur. PATRIOT ANTENNA SYSTEMS is not responsible or liable for damage or injury resulting from antenna installations.

WARNING

Antennas improperly installed or installed to an inadequate structure are very susceptible to wind damage. This damage can be very serious or even life threatening. The owner and installer assumes full responsibility that the installation is structurally sound to support all loads (weight, wind & ice) and properly sealed against leaks. PATRIOT ANTENNA SYSTEMS will not accept liability for any damage caused by a satellite system due to the many unknown variable applications.

Introduction

Thank you for purching your Patriot Commercial Antenna. We trust that you will find this to be a well designed product that will proved many years of reliable service. Please read this manual thoroughly before beginning assembly. For best results in the assembly process, perform each step in the same sequence as listed in this manual. Record the serial munber of the unit on to page two for future refferance and read the warrenty information. The serial number plate can be found on the pedestal mount.

Unpacking and Inspection

Shipping cartons should be unpacked and contents checked for damaged or missing parts. Should there be any parts that are damaged or missing, please contact technical support for replacement.

Site Selection

The main objective of conducting a site survey utilizing a compass and inclinometer is to choose a mounting location on the ground that will give you the greatest amount of swing for azimuth and elevation for present as well as future use. A thorough pre-installation site survey is strongly recommended because it can alert you to any “look angle”, soil, wind or other problems.

The first and most important consideration when choosing a prospective antenna site is whether or not the area can provide an acceptable “look angle” to the satellite. A site with a clear, unobstructed view facing south, southeast is required. Your antenna site must be selected in advance so that you will be able to receive the strongest signal available. Also consider obstructions that may occur in the future such as the growth of trees.

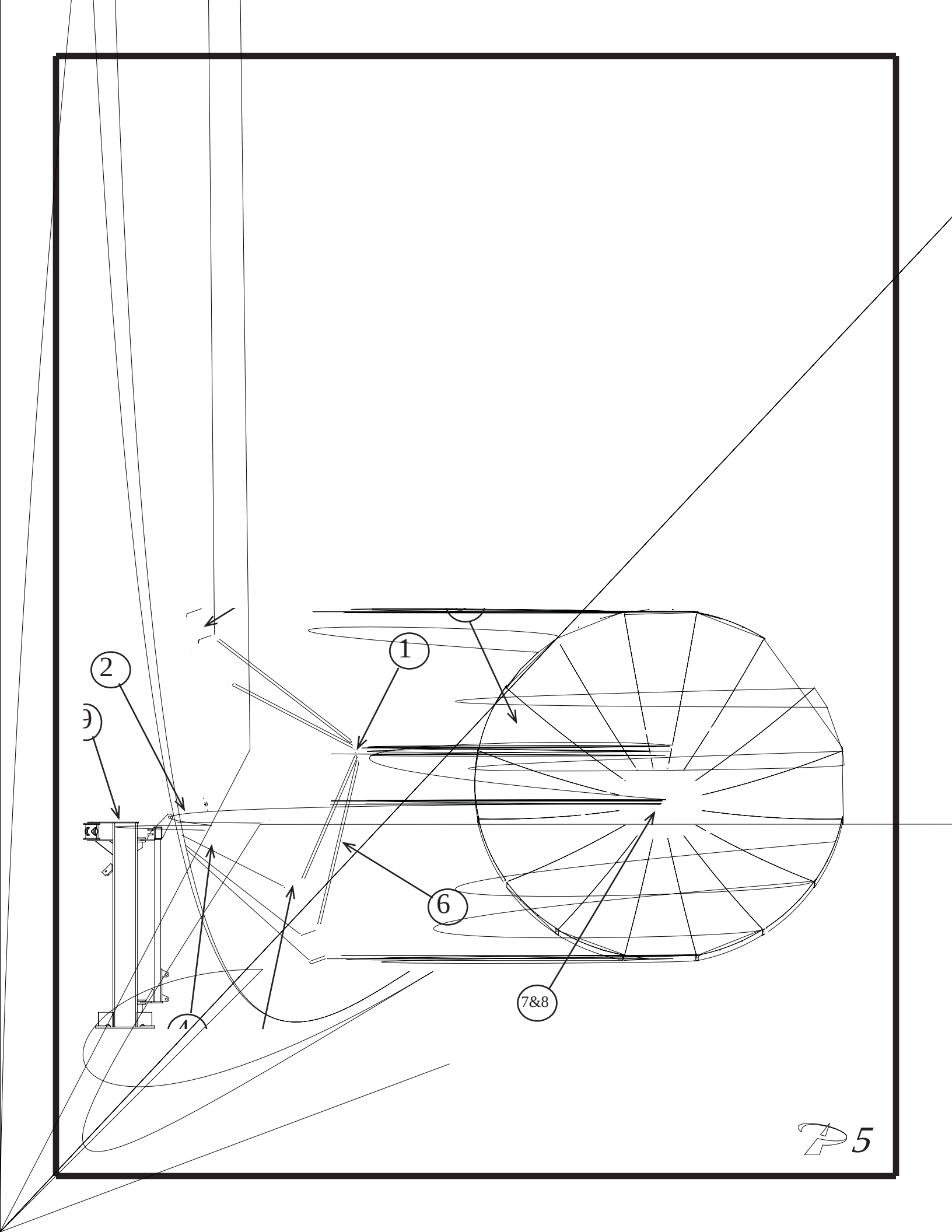
It is important to conduct an on-site survey with a portable antenna or with a compass and clinometer to avoid interference, obstructions, etc.

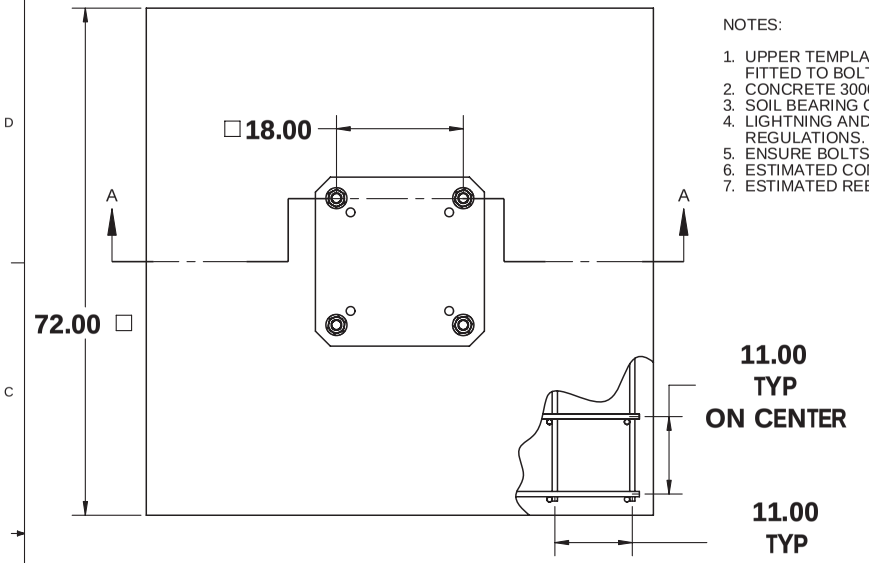
When selecting “look angle”, be sure to observe and take readings approximately 10 deg to the left and right, above and below your selected “look angle”.

Before Ground Pole Installation, the soil type should be checked because soil conditions vary widely in composition and load bearing capacity. A soil check will help you to determine the type
and size of foundation required to provide a stable base for the antenna.

Before digging is done, information regarding the possibility of underground telephone lines, power lines, storm drains, etc., in the excavation area should be obtained from the appropriate agency.

As with any other type of construction, a local building permit may be required before installing an antenna. It is the property owner’s responsibility to obtain any and all permits. Ground mounts are certified for 125 mph wind survival.


1
2
6
7&8



NOTES:

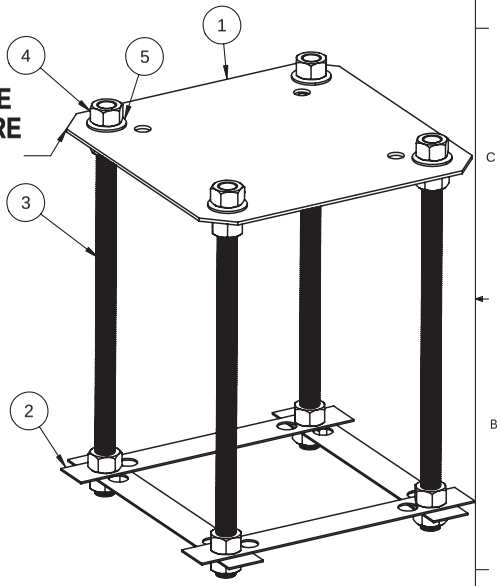
1. UPPER TEMPLATE REMOVED WHEN MOUNT IS FITTED TO BOLTS
2. CONCRETE 3000 PSI MINIMUM- VIBRATED
3. SOIL BEARING CAPACITY- 2000 PSF
4. LIGHTNING AND GROUNDING AS PER LOCAL REGULATIONS.
5. ENSURE BOLTS ARE VERTICAL.
6. ESTIMATED CONCRETE- 5.33 CUBIC YARDS
7. ESTIMATED REBAR- 392FT OF #5

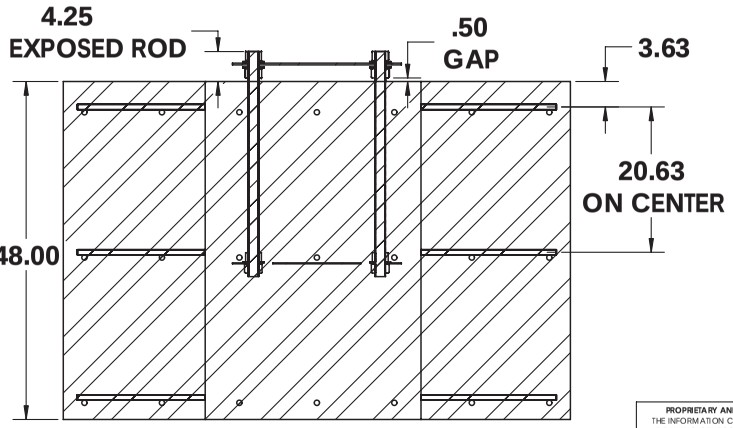
REVISIONS				
ZONE	REV.	DESCRIPTION	DATE	APPROVED

PRT-BTK38455

ITEM NO.	PART NUMBER	QTY.
1	4BPTBTK38455	1
2	20000021	4
3	3HTG0006	4
4	3HNG0001	16
5	3HWG0010	8

CARDBOARD TEMPLATE TO BE REMOVED BEFORE KINGPOST IS SET





SECTION A-A

PROPRIETARY AND CONFIDENTIAL
THE INFORMATION CONTAINED IN THIS DRAWING IS THE SOLE PROPERTY OF PATRIOT ANTENNA SYSTEMS. ANY REPRODUCTION IN PART OR AS A WHOLE WITHOUT THE WRITTEN PERMISSION OF PATRIOT ANTENNA SYSTEMS IS PROHIBITED.

	NAME	DATE
MATERIAL:		
DRAWN BY:	D PRATT	10/20/2006
ENG APPR.	BKS	10/20/2006

UNLESS OTHERWISE SPECIFIED:
DIMENSIONS ARE IN INCHES:
CORNERS ARE AT 90°

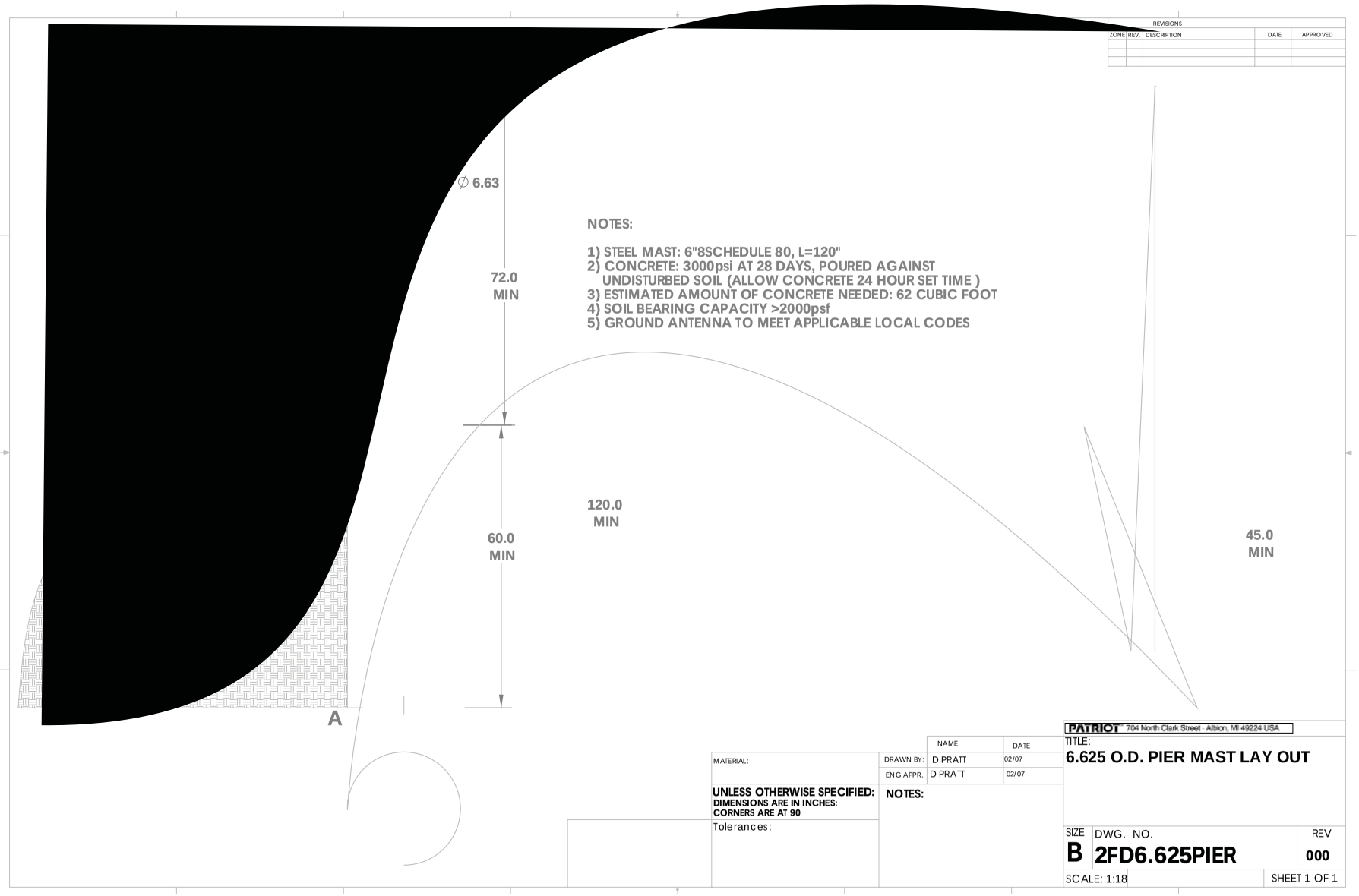
Tolerances:
FRACTIONAL ±1/16"
ANGULAR: ± 1°
X ± .062"
XX ± .031"
XX ± .015"

NOTES:

PATRIOT 704 North Clark Street - Albion, MI 49224 USA

TITLE:
FOUNDATION 3.8/4.5 P

SIZE	DWG. NO.	REV
B	2FD38-45P001	001
SCALE: 1:15		SHEET 1 OF 1



NOTES:

1) STEEL MAST: 6"8SCHEDULE 80, L=120"
2) CONCRETE: 3000psi AT 28 DAYS, POURED AGAINST UNDISTURBED SOIL (ALLOW CONCRETE 24 HOUR SET TIME)
3) ESTIMATED AMOUNT OF CONCRETE NEEDED: 62 CUBIC FOOT
4) SOIL BEARING CAPACITY >2000psf
5) GROUND ANTENNA TO MEET APPLICABLE LOCAL CODES

REVISIONS				
ZONE	REV.	DESCRIPTION	DATE	APPROVED

	NAME	DATE
DRAWN BY:	D PRATT	02/07
ENG APPR.	D PRATT	02/07

MATERIAL:

UNLESS OTHERWISE SPECIFIED:
DIMENSIONS ARE IN INCHES:
CORNERS ARE AT 90

Tolerances:

NOTES:

PATRIOT 704 North Clark Street - Albion, MI 49224 USA

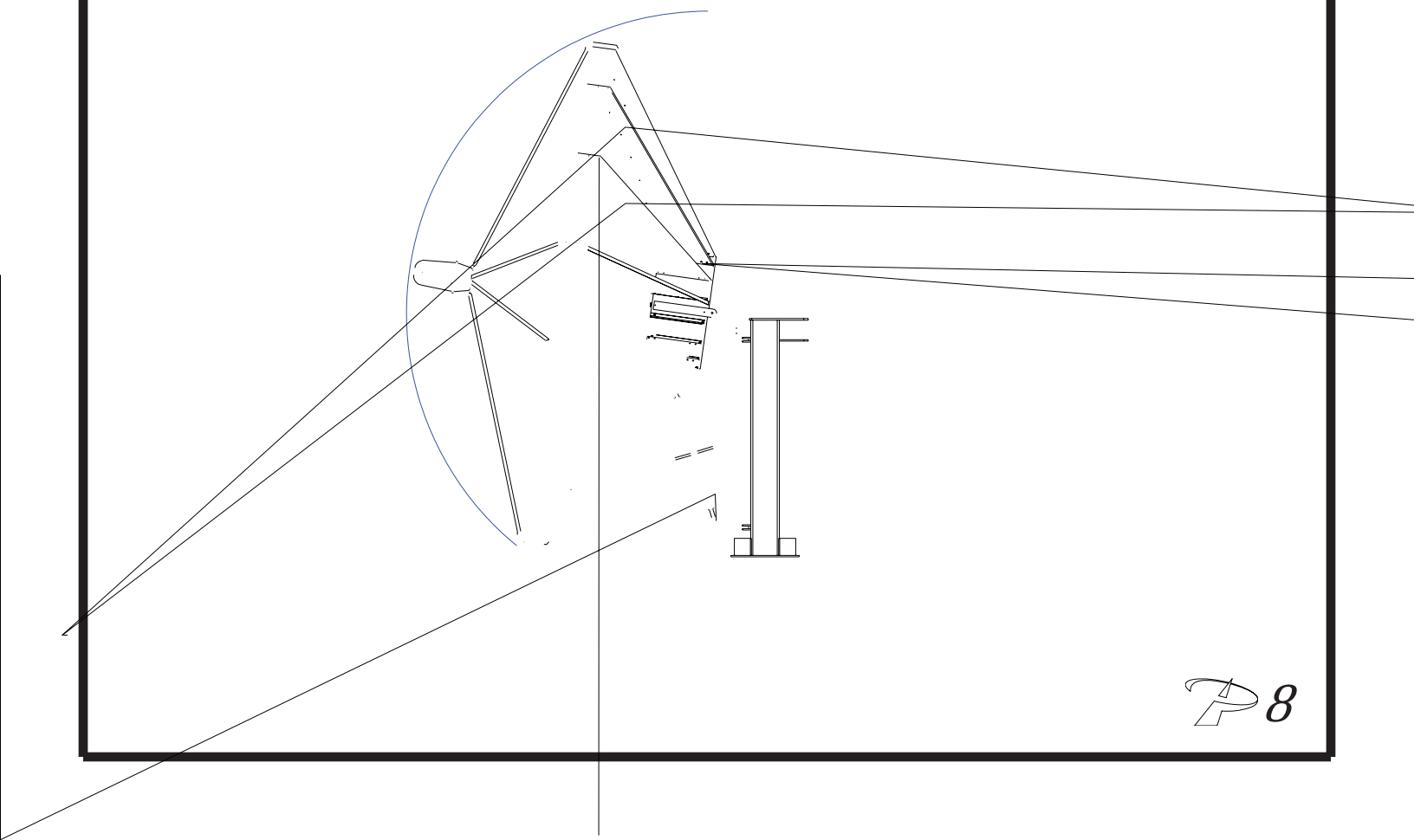
TITLE:
6.625 O.D. PIER MAST LAY OUT

SIZE	DWG. NO.	REV
B	2FD6.625PIER	000

SCALE: 1:18 SHEET 1 OF 1

27

The AzEl Fixed King Post mount is designed to have a total arc coverage of 132 degrees. The pad bolts must be placed in the concrete to allow coverage of the desired portion of the satellite arc. Please consult a satellite chart, software program or a qualified consultant for compass setting to point the king post bolt template.



Mount Assemb

1. Place the King Post e fo ndati
ing the "A-frame" asse in he de
the southern hemispher ge regar

Tighten the nuts so that ast s rela
washers as pictured belc

2. Assemble the Azimu ead d rod
sembled washers and nu u-l ole en
bar hardware so the Hub sa ely pla

3. With 2 helpers place t r in the ze
as shown using the preas e i place
detail!)

4. Assemble the elevatior sh wn, a
it to position the Hub asse ra "bird
position.

NOTE: Attach turnbuckle t h or lov
tachment based on your elev ne ts.

Azimuth
Lock r

CLEAN AND GREASE THREADED ROD ON BOTH ENDS BEFORE ANY ADJUSTMENT WHEN THREADED RODS ARE EXPOSED

attachment

Lower
attachment

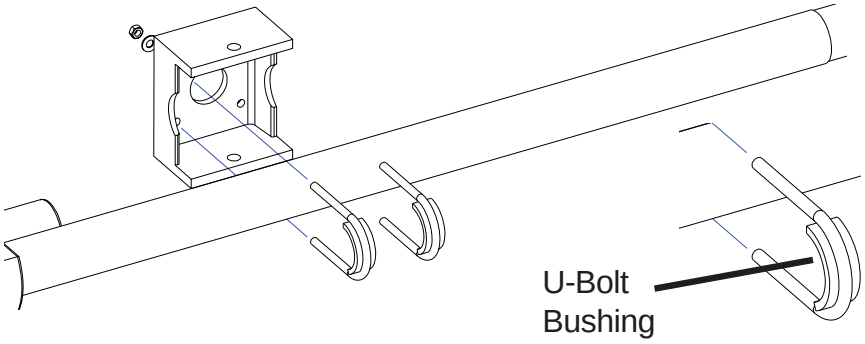
Mount Assembly- Motorized

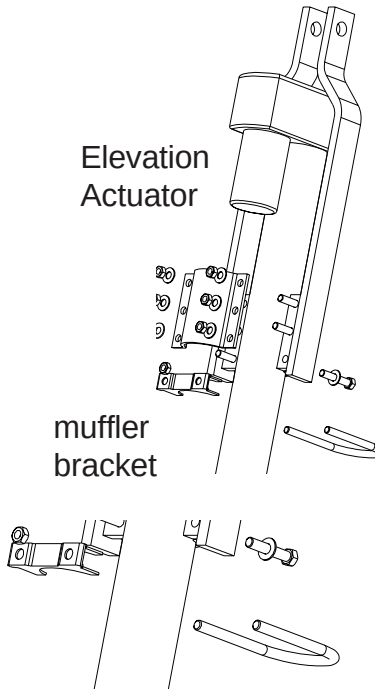
1. Set King Post to foundation as instructed on previous page.

2. Assemble the azimuth actuator to the main post and A-frame locking it into a steady position so the Hub assembly can be safely placed.

3. With 2 helpers place the hub assembly in the zenith (bird bath) position on top of the King Post A-frame as shown using the preassembled hardware in place on the A-frame. (Note the position of the Elevation detail!)

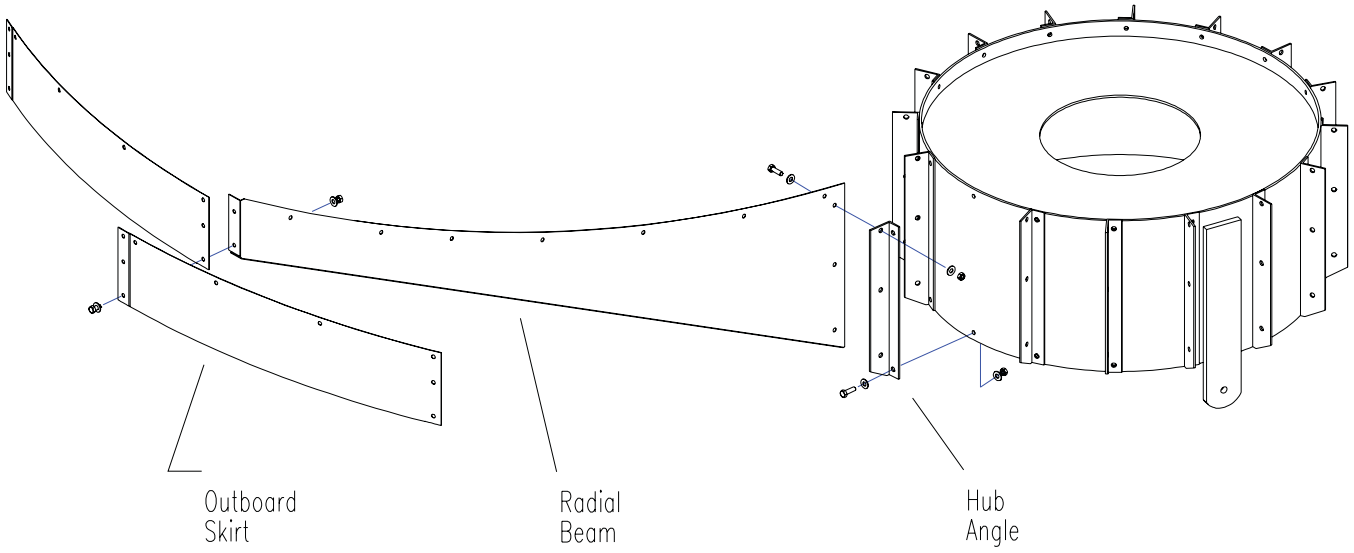
4. Assemble the elevation actuator as shown, and adjust it to position the Hub assembly in the upward "bird bath" position.

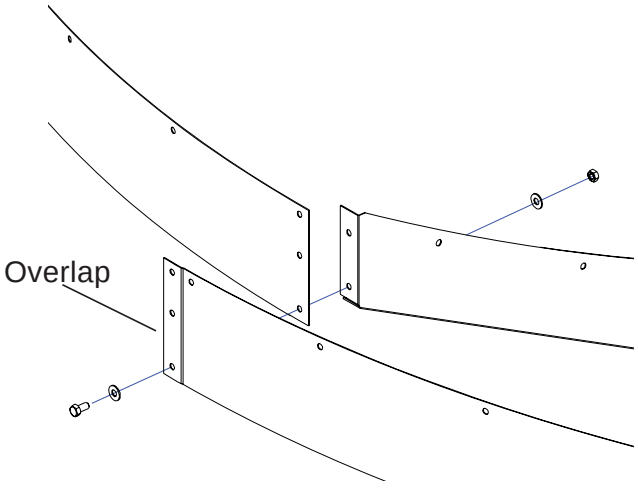


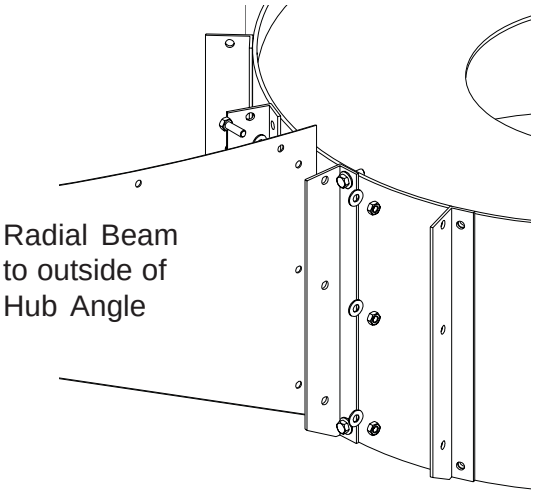


Reflector Assembly

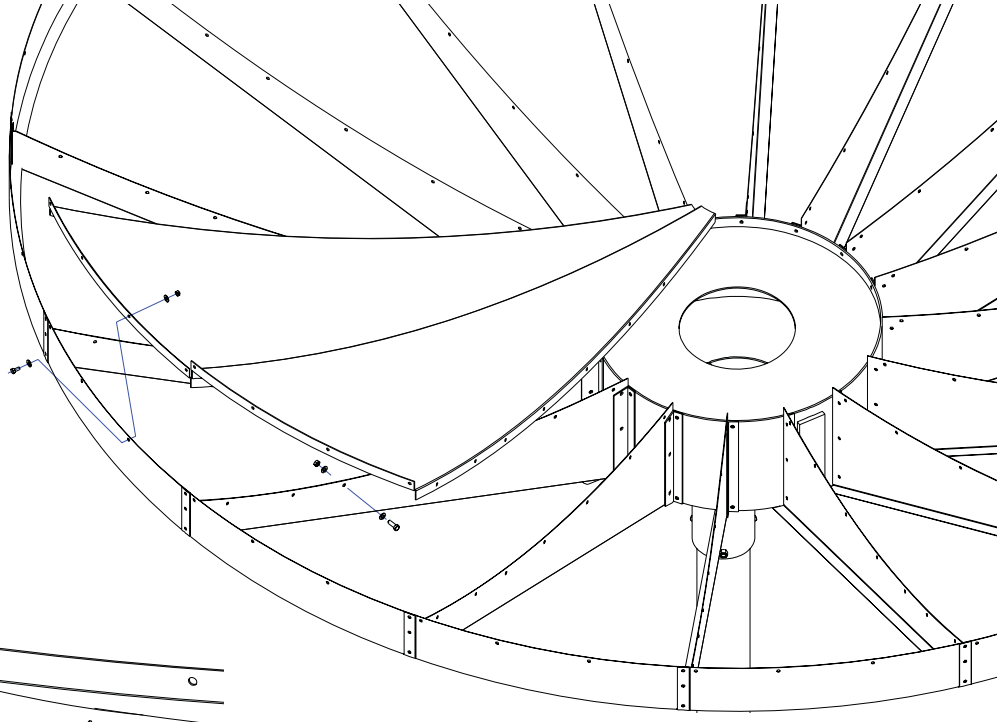
1. Install 4M38004 (ANGLE, 3.8 HUB) to hub as pictured below
   Make sure the cut corner is towards the BOTTOM of the hub assembly.
2. Once all 4M38004 (ANGLE, 3.8 HUB) are attached fasten hub to King post assembly as pictured on page 7.
3. Once hub is attached to King post assembly begin to attach 238006 (RADIAL BEAM 3.8 PRIME) to 4M38004 (ANGLE, 3.8 HUB).
   Make sure that Radial Beams are to the Out side of the hub angle and pictured below.
4. With all Radial Beams in place and hardware in place install all of the 238005 (OUT BRD SKIRT, 3.8 PRIME) on the end of the Radial Beams (bent edge down) Make sure overlap is in proper place as pictured below. Leave this hardware loose at this time.



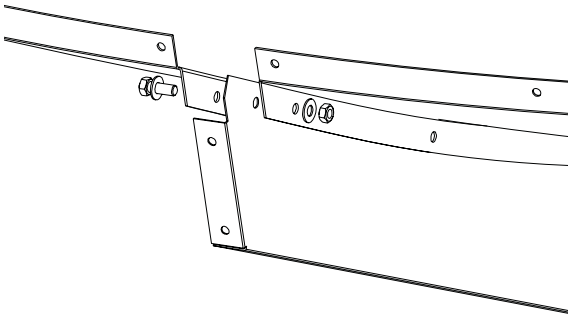




5. Set in place 2 Panels into the Radial Beams. The Radial Beam will be between the flange of each Panel (see below). Using 3 tapered alignment tools- 2 in the outermost holes, and 1 in the center hole to align the holes in the panels and radial beam, install the hardware in the remaining holes (from kit labeled- Petal to Radial Beam) starting with the hole closest to the hub. Use 1 bolt, 2 washers, and 1 nut per hole. Pull the tapered alignment tools and install that hardware. Leave hardware loose at this time.
Continue installing the remaining Petals using this method.



NOTE:
Radial Beam between panel flanges!

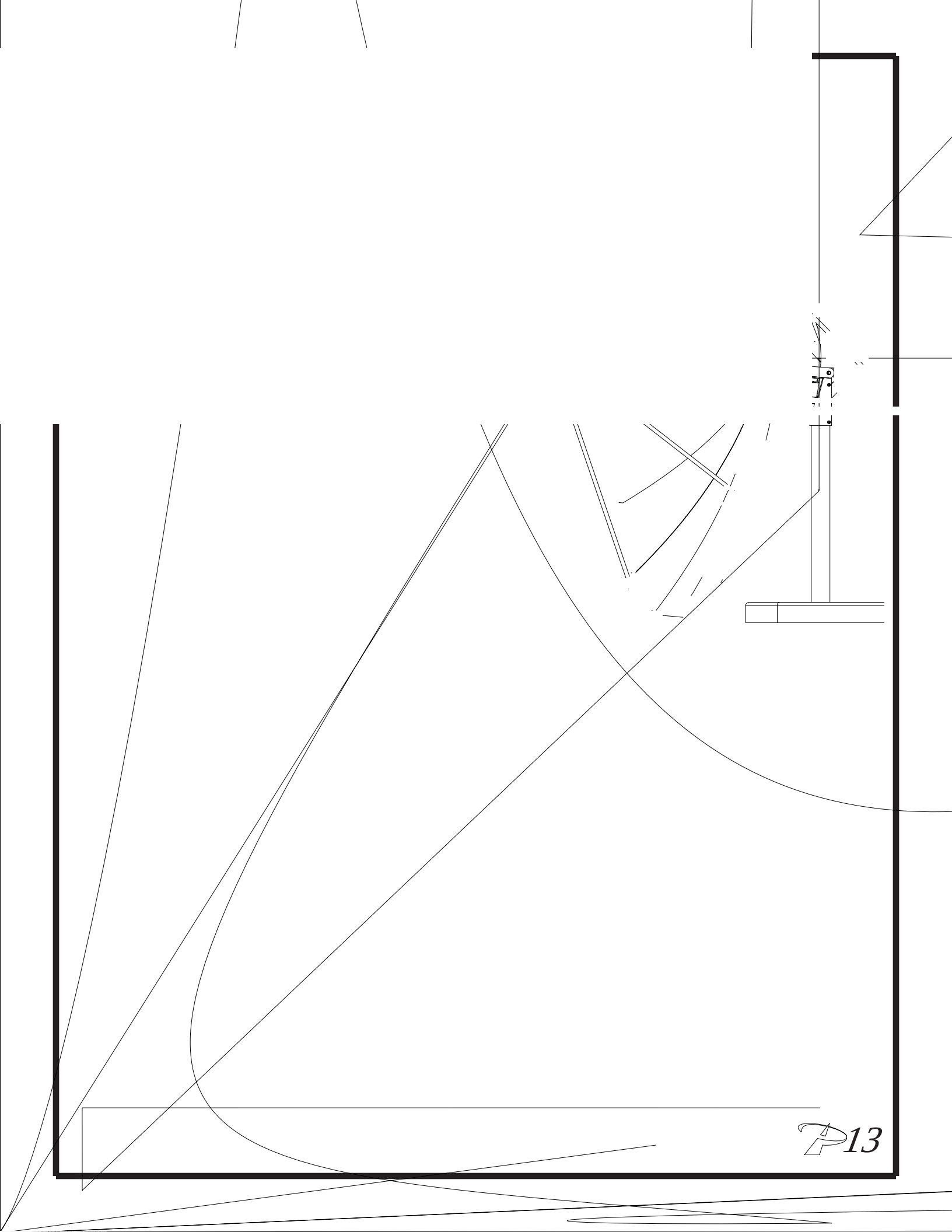


Tightening Procedure- Important!

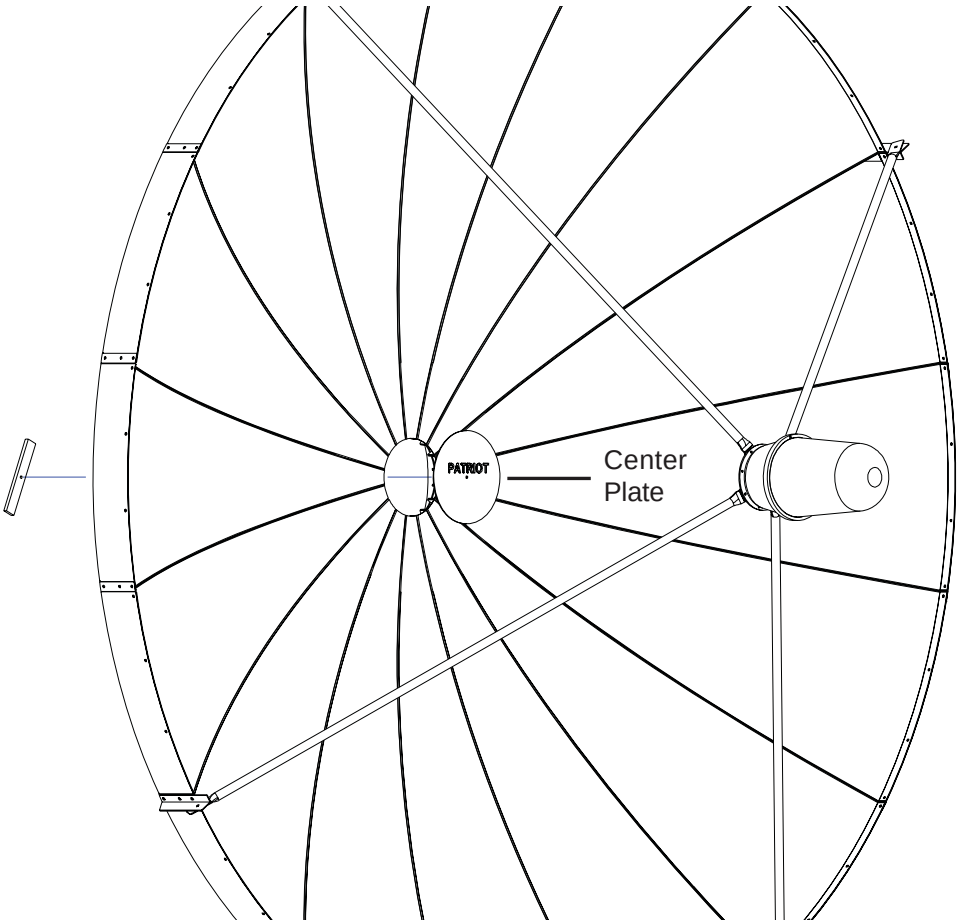
6. Starting at the Hub tighten all hardware by working outward 1 circular row at a time.

7. When all petals are tight put in the remaining hardware from the Outboard Skirt pack. At every 4th Radial Beam/Outboard Skirt junction include an Outboard Feed Angle as you assemble using hardware kit labeled- Feed Strut Bottom. Tighten hardware as you intall it.

NOTE: The 3 holes in Outboard Feed Angle should be aligned with the 3 holes in Outboard Skirt. See next page



With a helper place the center plate in place in the center of the opening of the panels using hardware from **Center Plate** pack. From behind place the back brace through the hub center across the hub opening. Tighten the nut on the bolt being careful not to overtighten which could crush the petals.
NOTE: If you need to climb into the dish be sure to place your feet along the Radial Beams and not into the center areas of a panel!



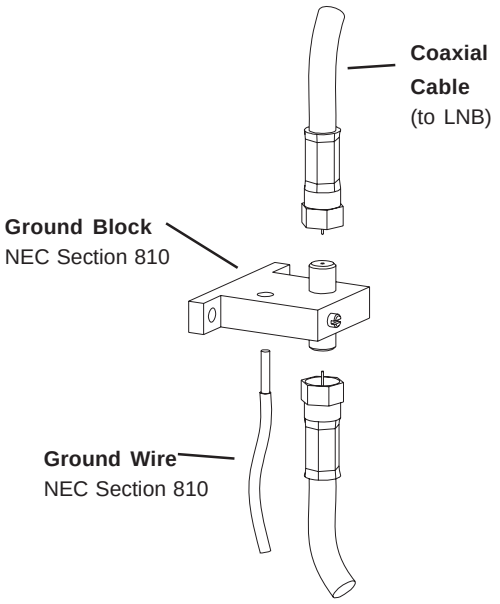
The antenna assembly is now complete. Now lower the antenna out of the "bird bath" position. To adjust the antenna toward the selected satellite you must first know its elevation angle above horizon. This will be the reference angle for the face of the antenna. Using an inclinometer on the face of the antenna pre-adjust the desired angle Tighten the Az-El pipe head bolts only enough to allow rotation of the mount on the ground pipe. Knowing the azimuth angle of the satellite from due south roughly aim the antenna in that direction. With the LNB connected to the proper sight-in equipment the antenna can be accurately adjusted to the satellite signal. Tighten all hardware.

Installation is complete.

Grounding

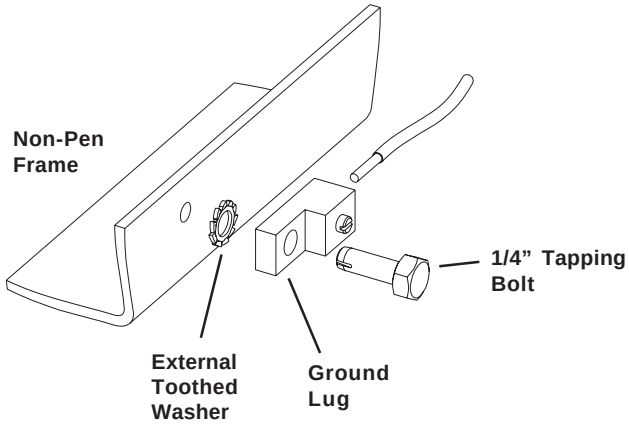
Grounding Antenna Feed Cables

1. Ground antenna feed cables in accordance with current National Electric code and local electric codes. The illustration shows a typical grounding method.
Clamps that provide a solid connection between ground wire and a ground source should be used.



Grounding Non-Penetrating Mount Frame (if applicable)

1. Ground the Non-Penetrating mount frame. The illustration shows a typical grounding method.
Refer to the NEC Section 810 and local electric codes for specific instructions on grounding the remaining end of the ground wire.



Antenna Pointing

1) Begin by obtaining the correct Az/El pointing data for the satellite of interest based for your site location.

2) Using an inclinometer or position readout form controller placed on the enclosure drum surface, position the antenna to the specified elevation angle.

3) Manually scan the antenna (back-and-forth in the azimuth around the direction of the specified azimuth angle) to achieve the maximum transponder signal.

4) Next repeat the procedure for elevation.

5) Repeat this procedure alternating between the azimuth and elevation until maximum transponder signal is achieved.